

Prevalence and Risk Factors for Occupational Voice problems in Teachers

Atia Ur-Rehman^{1*}, Seema Arif², Hafiza Munaza Hayat¹, Ali Kamran¹ and Sana Shakeel¹

¹Department of Health Professional Technologies, Faculty of Allied Health Sciences, University of Lahore, Lahore Pakistan

²Department of Special Education, University of Management and Technology, Lahore, Pakistan

Abstract:

A number of teachers are teaching all over Pakistan among private and public institutes. Voice problem is specified to be one of the major occupational risks of teachers actually the teachers frequently use their voice with high-intensity in noisy environment for a long time and without voice rest.

Objective:

To determine the prevalence and risk factors for occupational voice problems in teachers.

Methods:

A cross sectional survey was conducted on 120 teachers, through pre-tested questionnaire at 10 different schools and colleges of Gujranwala district Pakistan.

Results:

Results showed that prevalence of voice problems was greater in female teachers as compared to male teachers. Among the risk factors long duration of job was more dominant.

Conclusions:

Teachers develop voice problems during professional life due to risk factors that included personal issues, noisy environment and psychosocial factors.

Keywords:

Voice problems, Prevalence, symptoms, risk factors, Voice disorder.

Introduction

Every individual has different voice in same culture with the gender and age ranges, another definition of voice problems is it's the intention of unusual distinctiveness of voice draw attention to the direction of speaker voice and definition of voice disorder is problem with function and structure of larynx.¹ Occurrence of voice disorders mostly with those who were broadly voice user at their workplace, singers, telemarketers and teachers are endure from voice problems. Common symptoms are included sore throat, voice hoarseness, change in pitch and aphonia. All symptoms of voice disorders are due to structural change in vocal folds inflammation, swelling, nodules

and polyps.² Professionally many individuals faith on their voice, Teaching is one of them, others subsets includes singers and telemarketers. Voice related issues are significantly noticed in professional health and voice load is monitor in work place at appropriate voice limitation. Many studies are conducted at voice disorders of professional's occurrence and management of this issue.³ Teachers are professional voice users and mostly found to be at high risk for voice problems.⁴ Living and working places normally show effects on individuals health. Several studies conducted on teacher's working environments for instance acoustic conditions and noise levels that show consequences on teachers health.⁵ Teachers often use their voice without any amplification in noisy environments for hours to hours. Excessive and long period use of voice cause voice change and maximum voice disorders in teachers.⁶ Teaching profession demand teacher's voice for hours in challenging noisy environment that force to teachers to speak loudly without adequate voice rest.⁷ The main cause of Leave and absentees among teachers is mostly Voice disorders. Even several professional withdraw from teaching profession and consequently lose their professional uniqueness.⁸ Teachers are frequently suffered from cough, laryngeal infections, hoarseness, complete voice loss throat soreness and pain. These aspects are usually interrelated to noisy challenging environment and heavy time to speak. Due to Noisy environment teachers try to speak louder in abusive voice, that's misuse of vocal cord.⁹ Voice Disorders symptoms start gradually and periodically, with the passage of time turn out to be everlasting with onset of laryngeal disorders. Symptoms indications are strain voice, sore throat, hoarseness and inappropriate voice circumstances.¹⁰ Medically occupationally misuse of voice cause vocal cords nodules, dysphonia plicae ventriculais voice disorder seen in excessive voice users and vocal cords polyps/polypoids happening commonly in voice user professionals.¹¹ Voice disorders of teachers are identified through leaves and absentees from

educational institutes. Along with attendance issue economical circumstances and psychological isolation can't ignored but being away from the teaching escorts professionals to feel insecure because of voice problems.¹²

A large number of studies focused on the occurrence of self-assumed and possibilities of voice disorders that can appear or influence on incidence. A study was conducted to assess the prevalence of voice disorders among teachers the results of the study showed that 35% teachers suffered voice problems and 9% was with healthy voice.¹³ Research showed that voice problems mostly increased and more often become chronic due to excessive use of voice cords, even teachers are reported with nodules. Others factors of voice problems included gender, stress and life style related factors.¹⁴

A study was conducted to assess the relationship between working duration and environmental factor, the results showed the teachers whose are working in noisy room there at a higher rate of voice disorders. There are 13-14 % factors of voice disorders with nodules in teachers. A study showed women are recurrently affected with voice problems mostly with the age between 40 to 59 years including family history.¹⁵ Anticipated 40% of US teachers are with voice disorders by signs of hoarseness through ranging 20% to 50% adversely. Such voice disorders definitely impact on teachers teaching abilities. Study reported >20% of teachers absentee of one more days of work in one year because of voice-related problem. On the contrary there was zero absentee voice related problem in non teaching working staff.¹⁶ A comparison study was conducted in brazil, results shows that hoarseness is high in female (51.8%) than male (32.6%), it can be maximum with time and size of class as well, other factors also involve in voice disorders are air pollution, stress, anxiety and general health condition.¹⁷ Studies reported from teachers of 30 to 60 of age evidence prevalence indicators of voice symptoms that self-reported by teachers. Voice disorders of teachers' consequences, may root personal, financial, professional and functional problems. In Brazil teachers author emphasize on early screening in school including treatment and ensuring voice box from health agencies.¹⁸ Teachers' voice is at risk as compare to other intensive voice users, recently study conducted in India to find out the occurrence and risk factors of voice problems Indian primary school teacher.¹⁸ Voice assessments require perceptual analysis, laryngeal examination, acoustic

evaluation, and self evaluation in relation to the frequency of symptoms that impact and cause interruption on person's daily life. Symptoms are in form dysphonia that's concerning repulsive sensations during vocal production specifically in shoulder and neck. Identification and presenting symptoms of voice disorders is very important for management of voice disorders that's based on, how these symptoms influence the everyday life of the individual.¹⁹

The importance of the study was to determine the prevalence and risk factors for occupational voice problems in teachers, so that the factors could be reduced in future through extensive health education.

Methods:

A survey was done to determine the prevalence and to compare the risk factors for occupational voice disorders among the male and female teachers. Purposive sampling technique was used to collect data from the teachers of the different institutes of Gujranwala district Pakistan, in 2016. Pre tested questionnaires were distributed to teachers of 10 different schools and colleges. 120 teachers participated in research, 60 male and 60 female. Participants were not remunerated; consent forms were signed from every participant. Questionnaire was comprised of three portions, first was related to voice symptoms, second about risk factors and third was related about preventive measures for overcoming and curing voice problems in working environment.

Results:

The results section consisted of descriptive and inferential statistics. Frequencies, percentage, mean and standard deviations were calculated for the demographics. T test was used to assess the difference among the all study variables. The mean scores of male and female were different for symptoms ($M=4.3833$, $SD= 2.83496$, $M=2.7500$, $SD=1.85605$) that showed female had more symptoms of voice disorder. The mean scores of male and female were different for risk factors ($M= 7.6833$, $SD= 1.46706$, $M= 7.8167$, $SD= 1.70907$) that showed male perceived more risk factors for the voice related issues. The mean scores of male and female were also different for precautions ($M= 3.7167$, $SD= 2.22537$, $M= 3.3667$, $SD=1.81301$) concluded that male take more precautions to prevent voice related issues. (Table 1)

	Gender	N	M	SD
Symptoms	Female	60	4.3833	2.83496
	Male	60	2.7500	1.85605
Risk Factors	Female	60	7.6833	1.46706
	Male	60	7.8167	1.70907
Precautions	Female	60	3.7167	2.22537
	Male	60	3.3667	1.81301

Table 1: Mean and Standard Deviations of the Subscales on Gender (N= 120)

Note: n= sample size, M= Mean, SD= Standard Deviation

There was significant difference for the male and female on the voice issues (M= 4.3833, SD= 2.83496, 2.7500, SD= 1.85605), $t(3.734)$, $p(101.728) = .000$ (Table 2)

	Female		Male			
Variables	M	SD	M	SD	t	P
Voice issues / symptoms	4.3833	2.83496	2.7500	1.85605	3.734	.000

Table 2: Showing Mean Difference among the Male and Female (N= 120).

Note, P= significant level, M= mean difference, SD= standard deviation

The figure 1 showed there was difference in the duration of teaching and the prevalence of voice disorder as the duration increases the prevalence of voice disorders increases. The figure showed that teacher who had more teaching experience faced more voice related issues and teacher with less experience had less prevalence of voice disorders (Figure 1).

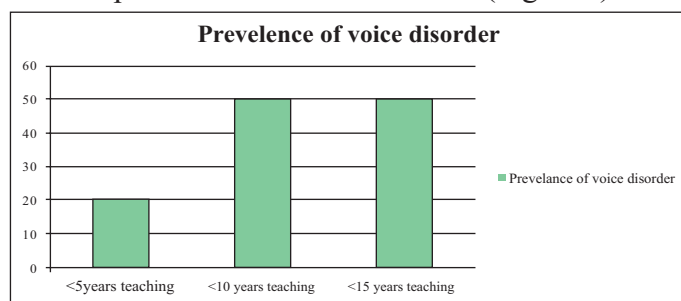


Figure1: Showing difference between the duration of teaching and the prevalence of voice problems.

Discussion:

The study was conducted to see the prevalence, compare the voice disorders among male and teachers. Current study demonstrate that female have more voice problems than male teachers. These findings were consistent with a research in Belgium, according to that teachers reported significantly with voice problems than general population and female teachers considerably reported at high levels (38%) in voice disorders than male colleagues (13.2%).²² Female teacher significantly suffer from medical issue

of voice problems and stay at home as compare to male. The results another study showed those females were more prone to develop voice problems that were in teaching profession. Study also supported to completion of vocal education during the training of teacher students to prepare the vocal professional user.

²³ A study by Narriere revealed that one out of two female teachers reported with voice disorders hence mean 50% female suffered from voice disorders in contrast one males out of four (26.0%) suffered with voice disorders. The teachers who were suffering from voice disorders were reported in stress.²⁴ In another it was hypothesize that the teachers with long duration of teaching career had more issues with their voice. The hypothesis had been proved by the result as more duration was associated with voice problems, the results were associated with a study furthermore demographical discrepancy shown in current study. The data showed that teachers with voice disorders 50-59 ages were abundant respondent in other words in this range score was highest respondent.²⁵

Conclusions:

Current study highlighted the prevalence of voice problems of teachers. Teachers were at high risk for voice problems due to number of factors, including excessive vocal use without voice rest; speak loudly due to noisy environment for long period. Factors may include personal, environmental, and psychosocial. Female teachers were mostly suffering from voice disorders, as they were at high risk due to sensitivity level, excessive occupied and pitch issues. In teaching profession women ratio was greater than male.

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